Ozone in St. Louis

If four or more **exceedances** of the health-based standard for **ozone** occur at the same monitor in a three-year period, it is considered a **violation**, and the area is designated as **nonattainment**. **Nonattainment** areas are then divided into five classifications based on the severity of the **exceedances** that occurred at the monitor in a three-year period: marginal, moderate, serious, severe and extreme. Under the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has designated many areas in the country as **nonattainment** for **ozone**. In 1999, the St. Louis **ozone nonattainment** area was one of five areas nationwide classified as a moderate **ozone nonattainment** area.

The St. Louis **ozone nonattainment** area includes the city of St. Louis, and the counties of St. Charles, St. Louis, Jefferson and Franklin. The Illinois side includes Madison, Monroe and St. Clair counties. The map at right shows the sites for air monitors in the **ozone nonattainment** area.

St. Louis Ozone Nonattainment Area Monitoring Sites

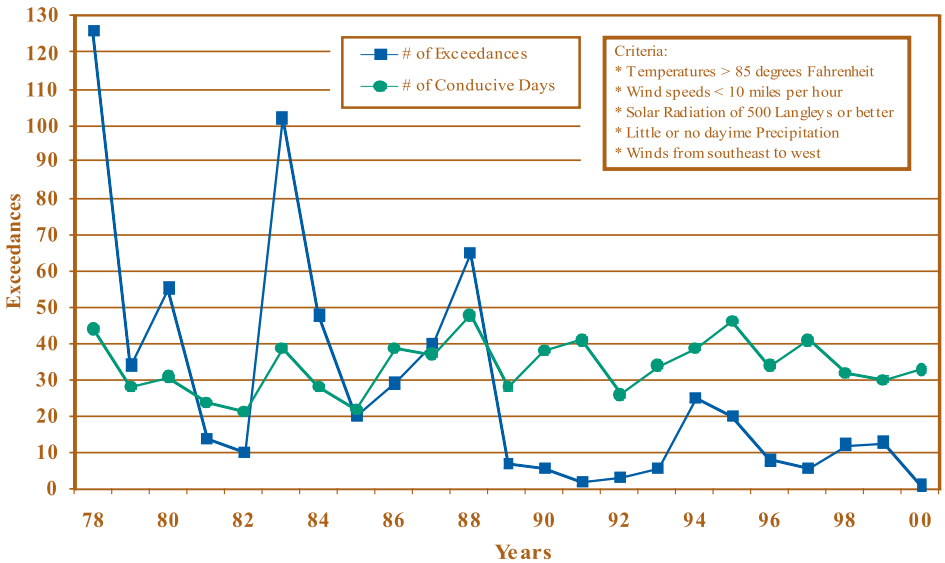
Missouri

01 Arnold Tenbrook, Arnold
02 West Alton
03 Orchard Farm
04 4580 S Lindbergh, Affton
05 305 Weidman Rd, Queeny Park
06 55 Hunter Ave, Clayton
07 3400 Pershall Rd, Ferguson
08 10267 St Chas Rock Rd, St Ann
09 8227 S Broadway & Hurck, St Louis
10 1122 Clark & Tucker, St Louis
11 Margaretta, St Louis

Illinois

12 409 Main St, Alton
13 200 W Division, Maryville
14 Pong Road, Edwardsville
15 54 N Walcott, Wood River
16 13th and Tudor, E St Louis

St. Louis Nonattainment Area 1-Hour Ozone 1978 - 2000
Number of Exceedances vs Conductive Days



Exceedance: An **exceedance** occurs when levels of a certain pollutant are higher than those deemed safe by the federal government.

Violation: Four or more **exceedances** at the same air quality monitor in a three-year period equal a **violation**.

Nonattainment: An area that has had a violation is classified as **nonattainment**. **Nonattainment** areas are then divided into five categories: marginal, moderate, serious, severe and extreme.

Controlling St. Louis Ozone

Missouri's **State Implementation Plan (SIP)** for the St. Louis **ozone nonattainment** area includes control measures and schedules for compliance with the Clean Air Act in order to attain the federal health-based standard for ground-level **ozone**. To reduce **ozone** concentrations to safe levels, the state must control both industrial and mobile sources of volatile organic compounds (VOC) and **nitrogen oxides (NO_x)**. Cars, trucks and buses are examples of mobile sources of VOCs. Major controls benefiting St. Louis recently included a vehicle emissions inspection and mainte-

Number of Days with Excessive Ozone - *St. Louis Nonattainment Area*

Number of One-Hour Exceedances

Site	Address	90	91	92	93	94	95	96	97	98	99	00
St. Louis	***Missouri***											
Arnold	Arnold and Tenbrook	0	0	0	0	2	2	1	1	1	1	0
West Alton	Highway 94	2	0	0	0	4	4	1	1	2	3	1
Orchard Farm							2	1	0	1	2	0
St. Louis	8227 S. Broadway	0	0	0	0	0	0	1	0	1	0	0
St. Louis	1122 Clark and Tucker	0	0	0	0	0	0	0	0	1	1	0
St. Louis	Newstead & Cote Brilliante	1	0	0	0	0	1	0	0	0	0	0
Affton	South Lindbergh	1	1	2	2	2	0	1	1	1	0	0
Queeny Park	305 Weidman	0	0	0	0	5	1	0	0	1	1	0
Clayton	55 Hunter Avenue	1	0	1	0	3	0	0	0	1	1	0
Ferguson	3400 Pershall Road	0	0	0	0	2	1	0	1	1	1	0
St. Ann	10267 St. Charles Rock Road	1	0	0	0	4	1	0	0	1	1	0
	Illinois	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**00**
Alton	409 Main Street	0	0	0	2	1	1	2	0	0	1	0
Maryville	200 West Division	0	0	0	1	1	1	0	0	0	0	0
Edwardsville	Poag Road	0	1	0	0	0	3	0	1	0	0	0
Wood River	54 North Walcott	0	0	0	0	1	2	1	1	0	1	0
East St. Louis	13th and Tudor	0	0	0	1	0	1	0	0	1	0	0
St. Louis Nonattainment Total		**6**	**2**	**3**	**6**	**25**	**20**	**8**	**6**	**12**	**13**	**1**

Number of Days with Excessive Ozone

St. Louis exceeded the **ozone** standard each summer between 1996 and 2000. The table above shows the number of days that sites in Missouri and Illinois reported exceeding the **ozone** standard. The St. Louis **ozone nonattainment** area reported only one **exceedance** of the one-hour standard during the 2000 **ozone** season (April 1 through October 31), which was a significant improvement from the 1999 **ozone** season, when 13 **exceedances** were reported.

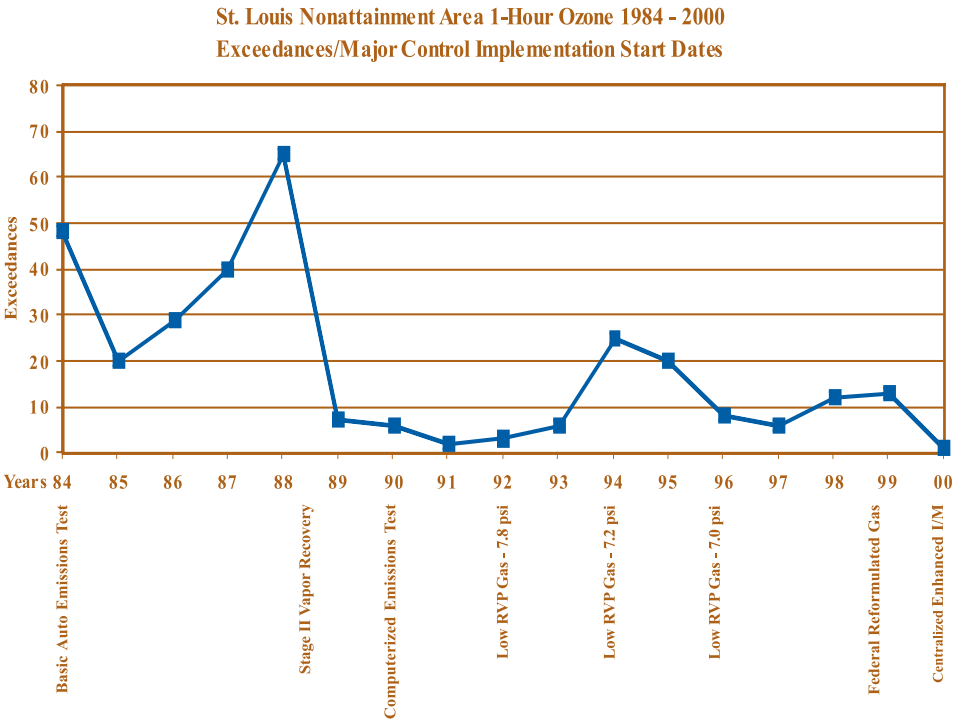
nance program, Stage II vapor recovery systems for gasoline refueling, advanced emissions control systems for existing and new industrial sources and controls on **NO_x** emissions from utility boilers. Two control strategies leading to the greatest reductions in VOC emissions are enhanced vehicle inspection and maintenance and reformulated gasoline.

Vehicle Emissions Inspections

Programs for vehicle emissions testing and repair, or Inspection and Maintenance programs, are key mechanisms for controlling mobile source emissions in many urban regions nationwide. The Gateway Clean Air Program represents a large portion of the Department of Natural Resources' **state implementation plan** to bring St. Louis into compliance with the **National Ambient Air Quality Standards (NAAQS)** for **ozone**, or urban smog.

At the end of 1999, the state ended the previous program of testing vehicle emissions using the basic (idle) emissions test procedure that was combined with the annual safety inspection conducted at local car service facilities every year. In April 2000, the 12 new emissions testing stations of the Gateway Clean Air Program opened. These stations were built and the new program is operated under a state contract with Environmental Systems Products Inc. (ESP Missouri). For the first time, Franklin County also began vehicle emissions testing in 2000, using an improved basic (idle) emissions test.

The Gateway Clean Air Program uses new emissions testing technologies. An enhanced emissions test simulates real driving conditions on a dynamometer (treadmill-like device) during testing. This measures specific pollutants from vehicles much more precisely than the older idle testing system. Stations performing the new tests cannot offer repair services. A second test, called RapidScreen, uses a remote sensing device to monitor exhaust emissions while vehicles are being driven on roads and highways. RapidScreen allows the very cleanest-running vehicles to pass the new emissions test without visiting emissions testing stations. For vehicles manufactured from 1971 through 1980, and for vehicles tested in Franklin County, an improved version of the idle test is used.



For more information on the Gateway Clean Air Program, see the special Gateway Clean Air Program section on Page 6 of this report. Additional information is also available by visiting the following Web sites: gatewaycleanair.com, www.dnr.state.mo.us/deq/apcp/gcap/ or www.cleanair-stlouis.com/gcap/.

Low Reid Vapor Pressure Gasoline and Reformulated Gasoline

Many volatile organic compound (VOC) control measures have been used in the effort to reach **attainment** of the **ozone** standard. In 1994, low REID vapor pressure gasoline was implemented in St. Louis. Reid vapor pressure (RVP) is a measure of gasoline's tendency to evaporate into the air. Lowering RVP reduces evaporative emissions of gasoline. Between 1994 and 1998, a state regulation restricted the RVP of gasoline sold in the St. Louis **nonattainment** area during the warmest months of the year, June 1 through Sept. 15.

Federal **reformulated gasoline (RFG)** has been required at retail gasoline stations in the St. Louis **ozone nonattainment** area since June 1, 1999. **RFG** is a gasoline formula designed to burn cleaner than conventional gasoline, and to reduce exhaust and evaporative emissions by adjusting the amount of various components already found in conventional gasoline. **RFG** is administered and enforced by the U.S. Environmental Protection Agency (EPA). Phase II of the **RFG** program, which began Jan. 1, 2000, requires additional emission reductions compared to Phase I **RFG**. Phase II **RFG** requires a minimum of

25 percent VOC reductions, a 20 percent reduction in air toxics and a 5 to 7 percent reduction in **NO**$_x$ emissions.

Area Reclassification ("Bump-Up") Moderate **nonattainment** areas were required to meet the **National Ambient Air Quality Standard** for **ozone** by Nov. 15, 1996. Because St. Louis failed to meet this goal, the area may be reclassified by the U.S. EPA, or "bumped up" in its **nonattainment** status from moderate to serious. In 1998, the U.S. EPA proposed a new policy that may allow St. Louis to obtain an **attainment** date extension. The department committed to meeting the requirements of the U.S. EPA's policy. Under the policy, the Department of Natural Resources must demonstrate that St. Louis is affected by air pollution transported from upwind areas. Also, all required local control measures must be implemented and the department must submit an approvable **attainment** demonstration showing the area will attain the **ozone** standard.

On Nov. 12, 1999, the department submitted a package of regulatory requirements to the U.S. EPA including the Vehicle Inspection and Maintenance Plan, the 15 Percent Rate-of-Progress Plan, the **Attainment** Demonstration, seven reasonably available control technology (RACT) rules and a draft rule to reduce statewide emissions of **nitrogen oxides**. This package was followed by a June 29, 2000, submittal of a final rule to reduce statewide emissions of **nitrogen oxides** and amendments to the **attainment** demonstration. On April 17, 2000, the U.S. EPA proposed to extend the **attainment** date for St. Louis to 2003. This proposal has not been finalized.

One obstacle to the **attainment** date extension is a lawsuit filed in July 1998 by environmental groups against the U.S. EPA for failure to bump up the St. Louis area. Should this bump up occur, St. Louis would be obligated to meet the more stringent mandatory requirements for serious **nonattainment** areas.

Number of Days with Excessive Ozone - *Kansas City Ozone Maintance Area*

Number of One-Hour Exceedances

Site	**Address**	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**00**
Kansas City	***Missouri***											
Liberty	Hwy 33 and County Hwy	0	0	0	1	0	3	0	1	2	0	0
Lawson	Watkins Mill State Park Road	0	0	0	0	0	3	0	0	1	0	0
Kansas City	49th and Winchester WOF	1	0	0	0	0	2	0	0	0	0	0
Kansas City	Richards Gebaur AFB	0	1	0	0	0	0	0	0	0	0	1
Kansas City	11500 N. 71 Hwy KCI Airport	1	0	1	0	0	1	0	1	1	0	1
	Kansas	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**00**
Wyandotte CO	Ann Avenue	0	0	0	1	0	0	1	0	1	0	0
Total		***2***	***1***	***1***	***2***	***0***	***9***	***1***	***2***	***5***	***0***	***2***